CLAIMS

1. (Cancelled).

2. (Currently amended) ~~The apparatus~~A spectral acquisition system, comprising:

an exploration subsystem operative to expose interior portions of ~~claim 1~~a three-dimensional sample, wherein the exploration subsystem includes a cutting implement and a guide~~.~~, and

a spectral acquisition subsystem operative to acquire images of the interior portions exposed by the exploration subsystem.

3. (Previously presented) The apparatus of claim 2 wherein the exploration subsystem includes an actuator operative to advance the cutting implement.

4. (Currently amended) The apparatus of claim ~~1~~2 wherein the exploration subsystem is operative in the field of view of the spectral acquisition system.

5. (Currently amended) The apparatus of claim ~~1~~2 further including a mechanical link, an electrical link, and a digital link between the exploration subsystem and the spectral acquisition system.

6. (Currently amended) The apparatus of claim ~~1~~2 further including a control module operative to control the exploration subsystem and process information from the spectral acquisition system.

7. (Currently amended) The apparatus of claim ~~1~~2 wherein the spectral acquisition system includes a two-dimensional array detector and a spectrally selective device.

8. (Currently amended) The apparatus of claim ~~1~~2 wherein the spectral acquisition subsystem operates in near-infrared or mid-infrared spectral regions.

9. (Currently amended) The apparatus of claim ~~1~~2 further including an airborne waste collection system having an inlet proximate the exploration subsystem.

10. (Currently amended) The apparatus of claim ~~1~~2 wherein the exploration subsystem includes a sample embedding substance.

11. (Cancelled).

12. (Currently amended) The method of claim 23 wherein the steps of actively processing and acquiring are applied to a friable material and further including the step of preparing the friable material to withstand the step of actively processing before the step of actively processing.

13. (Currently amended) .The method of claim ~~12~~16 wherein the steps of preparing, actively processing, and acquiring are applied to a bulk pharmaceutical material.

14. (Currently amended) The method of claim ~~12~~16 wherein the steps of preparing, actively processing, and acquiring are applied to a pharmaceutical dosage unit.

15. (Currently amended) The method of claim ~~12~~16 wherein the steps of preparing, actively processing, and acquiring are applied to a pharmaceutical tablet including at least one active ingredient and one inert ingredient.

16. (Currently amended) ~~The method of claim 12~~A spectral acquisition method, comprising:

actively processing a sample to expose characteristics of interior portions of the sample,

acquiring spectral information from the interior portions of the sample exposed in the step of exposing, wherein the steps of actively processing and acquiring are applied to a friable material, and

preparing the friable material to withstand the step of actively processing before the step of actively processing, wherein the step of preparing includes fixing the sample in a fixing material and the step of actively processing includes cutting the sample.

17. (Currently amended) The method of claim ~~11~~16 further including repeating the steps of actively processing and acquiring to create a data set of information about different interior portions of the sample.

18. (Previously presented) The method of claim 17 further including a step of selecting a spatial separation between the steps of actively processing to be on the same order as that of a spatial resolution of the step of acquiring.

19. (Previously presented) The method of claim 17 further including a step of interpolating data received from the steps of acquiring to adjust for a spatial separation between the steps of actively processing.

20. (Currently amended) The method of claim ~~11~~16 wherein the steps of actively processing expose planar interior surfaces.

21. (Currently amended) The method of claim ~~11~~16 wherein the step of actively processing and the step of acquiring both take place with the sample in a position constrained in at least one dimension.

22. (Currently amended) The method of claim ~~11~~16 wherein the step of actively processing and the step of acquiring both take place as part of an automated sequence.

23. (Currently amended) ~~The method of claim 11 further including steps of~~ A spectral acquisition method, comprising:

actively processing a sample to expose characteristics of interior portions of the sample,

acquiring spectral information from the interior portions of the sample exposed in the step of exposing, and

processing the spectral information acquired in the step of acquiring to obtain two-dimensional chemical image planes and reconstructing at least one three-dimensional image from the two dimensional chemical image planes.

24. (Currently amended) The method of claim ~~11~~28 wherein the step of acquiring operates in near-infrared or mid-infrared spectral regions.

25. (Cancelled).

~~23.~~26. (Currently amended) The apparatus of claim ~~22~~28 wherein the means for holding include means for embedding the pharmaceutical tablet.

~~24.~~27. (Currently amended) The apparatus of claim ~~22~~28 wherein the means for holding include a holding wax.

~~25~~. (Currently amended) ~~The apparatus~~28. A spectral acquisition system, comprising:

means for holding a friable pharmaceutical tablet,

means for exposing interior portions of ~~claim 22~~the friable pharmaceutical tablet, wherein the means for exposing includes a cutting implement and a guide~~.~~, and

means for obtaining spectral images of the exposed interior portions.

~~26.~~29. (Currently amended) The apparatus of claim ~~25~~28 wherein the means for exposing includes means for advancing the cutting implement.

~~27.~~30. (Currently amended) The apparatus of claim ~~22~~28 wherein the means for holding are operative to hold the pharmaceutical tablet in a field of view of the means for obtaining spectral images during operation of the means for exposing.

~~28.~~31. (Currently amended) The apparatus of claim ~~22~~28 further including a mechanical link, an electrical link, and a digital link between the means for exposing and the means for obtaining spectral images.

~~29.~~32. (Currently amended) The apparatus of claim ~~22~~28 further including means for controlling the means for exposing and for processing information from the means for obtaining spectral images.

~~30.~~33. (Currently amended) The apparatus of claim ~~22~~28 wherein the means for obtaining spectral images operate in near-infrared or mid-infrared spectral regions.

~~31.~~34. (Currently amended) The apparatus of claim ~~33~~28 further including means for collecting airborne waste from the means for exposing.

~~32.~~35. (Currently amended) A spectral acquisition method comprising,

positioning a pharmaceutical tablet within an optical field of view of an acquisition system,

removing material from the tablet within the field of view, and

acquiring an image of the tablet by the acquisition system after the step of removing.

~~33.~~36. (Currently amended) The method of claim 32 wherein the steps of removing and acquiring are applied to a friable tablet and further including the step of preparing the friable tablet to withstand the step of removing.

~~34.~~37. (Currently amended) The method of claim 33 wherein the steps of preparing, removing, and acquiring are applied to a pharmaceutical tablet including at least one active ingredient and one inert ingredient.

~~35.~~38. (Currently amended) The method of claim 33 wherein the step of preparing includes fixing the sample in a fixing material and the step of removing includes cutting the sample.

~~36.~~39. (Currently amended) The method of claim 33 wherein the step of preparing includes fixing the sample in a fixing material and the step of removing includes cutting the sample with a blade.

~~37.~~40. (Currently amended) The method of claim 33 wherein the step of preparing includes fixing the sample in a fixing material and the step of removing includes cutting the sample with a rotating blade.

~~38.~~41. (Currently amended) The method of claim 32 further including repeating the steps of removing and acquiring to create a data set of information about different interior portions of the sample.

~~39.~~42. (Currently amended) The method of claim 38 further including a step of selecting a spatial separation between the steps of removing to be on the same order as that of a spatial resolution of the step of acquiring.

~~40.~~43. (Currently amended) The method of claim 38 further including a step of interpolating data received from the steps of acquiring to adjust for a spatial separation between the steps of removing.

~~41.~~44. (Currently amended) The method of claim 32 wherein the step of removing and the step of acquiring both take place with the sample in a position constrained in at least one dimension.

~~42.~~45. (Currently amended) The method of claim 32 wherein the step of removing and the step of acquiring both take place as part of an automated sequence.

~~43.~~46. (Currently amended) The method of claim 32 further including steps of processing the spectral information acquired in the step of acquiring to obtain two-dimensional chemical image planes and reconstructing at least one three-dimensional image from the two dimensional chemical image planes.

~~44.~~47. (Currently amended) The method of claim 32 further including the step of obtaining the tablet as a sample of a tablet making process and wherein the steps of obtaining, removing, and acquiring take place as part of a quality control process for the tablet making process that includes further steps of obtaining, removing, and acquiring.

~~45.~~48. (Currently amended) The method of claim 32 further including the step of obtaining the tablet from a formulation-phase experiment.

~~46.~~49. (Currently amended) The method of claim 32 wherein the steps of removing and acquiring take place as part of a root-cause analysis process.

~~47.~~50. (Currently amended) The method of claim 32 wherein the step of acquiring an image acquires an image in near-infrared or mid-infrared spectral regions.

~~48.~~51. (Currently amended) The method of claim 32 wherein the step of acquiring is operative to obtain an image reflected from a surface of the tablet exposed by the step of removing.

~~49.~~52. (Currently amended) The method of claim 32 wherein the step of acquiring is operative to obtain an image from material removed by the step of removing.

53. (New) The method of claim 16 wherein the step of acquiring operates in near-infrared or mid-infrared spectral regions.